to address all of the problems that will be encountered in the AO. Electronic connectivity can provide commanders with immediate access to foreign area experts and medical, legal, and other specialists with the necessary knowledge, information, and skills.

SECTION II. COMMAND AND CONTROL CENTERS

Command and control centers are established to support the headquarters of all units of battalion size or larger. These centers, especially when dealing with air command and control, are referred to as command and control agencies. They are also known as command and control facilities. From these centers, watch officers and cells from the various staff sections plan, monitor, coordinate, control, and support the day-to-day activities of the unit. These centers include the personnel, software, hardware, shelters, and ancillary equipment needed to support command and control.

Each principal staff function is supported by one or more command and control centers. The ACE employs specialized command and control centers comprising the Marine air command and control system (MACCS) to provide the ACE commander with the ability to exercise command and control. Marine air control group (MACG) units are responsible for installing, operating, and maintaining these centers.

The key command and control centers supporting the functional areas of maneuver, intelligence, fires, aviation, logistics, and CIS are discussed below, as are the shipboard command and control facilities that support the MAGTF. Adequate information systems support and data communications connectivity are essential for efficient operation of these centers.

Maneuver

The key command and control center in the MEF main is the COC. The COC supports the maneuver function and integrates information from all other command and control centers and functional areas. In most cases, the COC is collocated with the FFCC, which supports the fires function, and the MAGTF all-source fusion center (MAFC), which supports the intelligence function. These three command and control facilities work together closely, focusing on current operations and responding to the immediate needs of the MEF commander. Similarly, in the main echelon of GCE units, the COC is usually collocated or integrated with the FSCC and the combat intelligence center (CIC); these centers support maneuver, fires, and intelligence, respectively.

Marine Expeditionary Force Combat Operations Center

The MEF COC consists of G-3 and G-2 watch officers and noncommissioned officers (NCOs), a senior watch officer, and a situation report watch officer. Many enlisted Marines assist in operating tactical information systems, managing information, and maintaining situation displays and the CTP. The G-2 and G-3 watch officers receive information from collocated MAFC personnel (intelligence) and FFCC representatives (fires and air), the SARC, and subordinate and adjacent units. G-2 and G-3 watch officers filter this information, update the CTP as necessary, and forward critical items to the senior watch officer. The senior watch officer also receives information that affects current operations from other principal staff sections (G-1, G-4, and G-6). The senior watch officer evaluates information in the context of current operations and determines whether action is required and whether the COP requires

updating. Depending on the situation, the senior watch officer may be assisted in this process by other officers from current operations. On the basis of authority delegated by the MEF commander, the senior watch officer acts by issuing orders or briefing the MEF commander and recommending action.

Ground Combat Element Combat Operations Center

The COC is the command's "nerve center" where information is fused to provide situational awareness for the commander and his staff. The division COC, as well as regimental and battalion COCs in the GCE, functions in much the same fashion as the MEF COC. Current operations are directed from the division COC, which is typically manned with G-3 personnel, G-2 personnel, the division engineer, the division air officer, and NBC personnel. As at the MEF, the COC is the location for the G-2 and G-3 watch officers and NCOs. These watch officers monitor current operations by using the CTP and coordinate activities for the commander. Their activities are based on situational awareness gained from the CTP and on input, focusing on the CCIRs, from staff sections and other information sources. At the regimental and battalion levels, the senior watch officer and the operations watch officer may be the same individual, and other watch officers may be senior NCOs. It is important that these lower level COCs remain compact and lightweight for ease of displacement and to facilitate maneuver. At the battalion level and occasionally at the regimental level, the COC must be tailored as necessary to support foot mobile operations.

At regiment and battalion levels, the COC is increasingly supported by automated tactical information systems and data communications. These systems support the information processing and exchange requirements of the COC and enable it to monitor and direct current operations.

Voice radio nets are used extensively in regimental and battalion COCs. However, the fielding of additional information systems will require greater access to and use of data communications. Strict procedures will be required to manage information flow to preclude overloading an extremely limited data communications capability. These procedures must focus on timely satisfaction of the CCIRs and maintaining the CTP.

Rear Area Operations Center/Rear Area Command Post

Successful rear area operations require an effective command and control organization and reliable command and control systems, including communications, intelligence, and planning. Three options for command and control of rear area operations are for the Marine commander (Marine Corps component or MAGTF) to retain command and control, designate a rear area coordinator, and/or designate a rear area commander.

The rear area coordinator or rear area commander normally establishes a facility from which to command, control, coordinate, and execute rear area operations. The facility established by the rear area coordinator is referred to as the RAOC. The facility established by the rear area commander is called the rear area command post (RACP). In both cases, this facility normally contains an operations cell and a logistic cell to coordinate the following:

- Security forces; e.g., MP and tactical combat force.
- Fire support agencies.
- Support units; e.g., supply, engineer, and medical.
- Movement control agencies.
- Other command and control facilities.
- Bases and base clusters.
- Other organizations as necessary; e.g., CI team and CAG.

A rear area command and control facility may be located within or adjacent to an existing facility

or it may be a single-purpose facility established specifically for rear area operations. An existing facility may include an existing organization, a cell within an existing organization, or a separate organization collocated with a host organization. Based on the scope of rear area operations within a major theater of war, it may be necessary to establish a separate rear area command and control facility.

The rear area command and control facility integrates and coordinates its activities with the main and forward command posts to ensure that the Marine Corps component or MAGTF commander has a better understanding of the battlespace and can influence and orchestrate the single battle. The rear area command and control facility must have reliable communications and connectivity with the higher, adjacent, and subordinate headquarters involved in rear area operations. Connectivity to the joint rear area intelligence network, movement control infrastructure, and other support structures is also vital to the successful conduct of rear area operations. (MCWP 3-41.1, *Rear Area Operations*)

Intelligence

The CIC is established under the G-2/S-2 within the MAGTF headquarters to provide centralized direction for the overall intelligence effort. This organization serves the entire force by consolidating, validating, and prioritizing intelligence requirements from all MAGTF elements. The CIC links the MAGTF to theater, national, and allied intelligence assets. The CIC includes as key internal nodes the MAFC and the SARC. The CIC also provides small G-2/S-2 elements to support both the current and future operations cells. The CIC is supported by the reconnaissance operations center and the operations control and analysis center (OCAC).

Marine Air-Ground Task Force All-Source Fusion Center

The MAFC provides intelligence analysis, production, and targeting information. An integral part of the current operations effort, the MAFC is collocated with the MAGTF COC. The results of all surveillance, reconnaissance, and intelligence gathering flow into the MAFC, where these results are fused with previous collections and intelligence products are updated and disseminated.

Surveillance and Reconnaissance Center

The SARC is the primary intelligence command and control node used to direct, coordinate, monitor, and supervise MAGTF intelligence collection conducted by organic, attached, and direct support assets. The SARC is located in proximity to the MAGTF COC. The SARC assigns collection tasks to various MAGTF assets: the force reconnaissance company, the sensor control and management platoon (SCAMP), the unmanned aerial vehicle (UAV) squadron, the radio battalion, CI detachments, HUMINT exploitation teams, as well as the imagery interpretation platoon and the topographic platoon of the intelligence battalion production and analysis company. Collection results are forwarded to the MAFC for incorporation into current intelligence products.

Reconnaissance Operations Center

The reconnaissance operations center serves as a focal point for monitoring and supervising the employment of force reconnaissance. Located near the MAFC, this facility gathers information from dispersed teams, decrypts reports, and forwards information for fusion into the overall intelligence situation display. Personnel manning the reconnaissance operations center assist reconnaissance teams with movement and other activities as needed.

Operations Control and Analysis Center

The OCAC provides centralized direction, management, and control of SIGINT and electronic warfare activities within the MAGTF and coordinates with external theater and national assets. Assigned personnel process, analyze, and disseminate collected information. The OCAC is located within the MAGTF headquarters compound near other intelligence agencies. The OCAC provides an interface between the radio battalion and the MAGTF G-2.

Intelligence Center

The G-2/S-2 will establish intelligence centers at all echelons of the MAGTF down to the battalion level. Personnel assigned to the intelligence center will collect, process, integrate, analyze, evaluate, and interpret intelligence and continually update the enemy situation. This information will be rapidly provided to current and future operations. These centers will be collocated with the COC whenever possible.

Fires

Command and control centers are established in all maneuver units to coordinate fire support and in artillery units to exercise tactical and technical fire support direction.

Force Fires Coordination Center

The FFCC is established at the MEF level to assist the MEF commander in planning and coordinating deep fires. The FFCC performs three primary functions for the MEF: planning, acquiring, and maintaining target information; coordinating and integrating MAGTF-level fires with future operations; and coordinating and integrating MAGTF-level fires with current operations. Located within the MEF main, this facility assists both future operations and current operations in their targeting functions. Additionally, the FFCC provides coordination between the MEF and JTF targeting boards and centers. FFCC watch officers may be integrated with the COC to facilitate coordination of deep fires.

Fire Support Coordination Center

Each Marine ground combat organization from division to battalion level employs an FSCC as an advisory and coordination agency. The FSCC is collocated with the COC. The senior FSCC coordinates and deconflicts fire support efforts among subordinate units and centers. The FSCC includes the FSC, artillery liaison, tactical air control party (TACP) personnel, and a naval surface fires liaison. At division level the artillery regiment commanding officer serves as the FSC. At regiment level the FSC is typically provided by the supporting artillery battalion. At battalion level the FSC is normally the weapons company commander.

Fire Direction Center

Fire direction centers (FDCs) exist at artillery regiments, battalions, and batteries. These organizations permit respective commanders to plan and control fires. Fire direction activities may be centralized or decentralized. At regiment and battalion levels, the FDC exercises tactical fire direction. The battery FDC provides technical fire direction by determining firing data. This firing data is issued to artillery sections through fire commands. Battery FDCs are also capable of tactical fire direction and would perform this function in cases, such as MEU(SOC) deployments, when the battery operates independently.

Electronic Warfare Coordination Center and Information Operations Cell

The EWCC facilitates coordination of electronic warfare operations with other fires and CIS. In many cases an IO cell is established that is responsible for the broad coordination of all IO activities, including electronic warfare. Each center/cell coordinates efforts by the G-2, G-3, and G-6 to eliminate conflicts between these

overlapping battlespace functions. The EWCC, and/or IO cell if established, is under staff cognizance of the G-3. Assigned personnel identify potential conflicts in planned operations and work to resolve these issues. The EWCC (or IO cell) includes an electronic warfare officer, a CIS representative, and other LNOs; e.g., PSYOP, civil-military operations or public affairs as needed. Liaison could include radio battalion representation, airborne electronic countermeasures officers, a MACG radar officer, and other-Service representatives.

Aviation

The MACCS provides command and control support for the ACE in the form of several unique command and control centers. The responsibility for installing, operating, and maintaining these centers, usually referred to as agencies, is the primary mission of specialized units comprising the MACG. This approach is in contrast to the way in which COCs are installed, maintained, and operated in support of the other MAGTF elements. Only the ACE has personnel trained and assigned to units whose primary mission is command and control support. MCWP 3-2; MCWP 3-25, *Control of Aircraft and Missiles*; and publications in the MCWP 3-25.1 through 3-25.12 series provide detailed TTP for aviation command and control and employment of MACCS agencies.

Tactical Air Command Center

The TACC is operated by personnel from the ACE staff, the Marine tactical air command squadron (MTACS), and the MACG staff. The TACC is the senior MAGTF air command and control agency. The TACC provides the operational command post from which the ACE commander and his staff plan, supervise, coordinate, and execute all current and future MAGTF air operations. The TACC provides the capabilities necessary to integrate, coordinate, and direct air operations in support of the MAGTF. The TACC interfaces with the other ACE command and control agencies, other MAGTF elements, and external civil and military air control organizations. Its primary CE interface is with the FFCC/COC. The TACC's primary external interfaces are with the joint air operations center (JAOC) and the Navy tactical air control center (TACC). In addition to serving as the ACE command post, the TACC, with augmentation, provides many of the capabilities necessary for the MAGTF commander to serve as the JFACC.

The TACC consists of three mutually supporting, cross-functional operational organizations supported by a centralized intelligence organization. The TACC does not provide facilities for all ACE staff functions. It provides a facility from which the ACE commander and staff plan and execute aviation and aviation support operations. TACC organizations are—

- Future plans.
- Future operations (future ops).
- Current operations (current ops).
- Air combat intelligence (ACI).

Future plans conducts aviation and aviation support planning for the next mission change. Future ops develops future ATO(s) and prepares operation orders or fragmentary orders for the next ACE mission change. Current ops executes the daily ATO and assesses its effectiveness. ACI is embedded within the TACC. Timely, tailored and fused intelligence is integral to the functioning of future plans, future ops, and current ops. ACI is the focus of all aviation intelligence activities supporting the ACE. It produces and disseminates aviation-specific, all-source intelligence, to include assessments of adversary capabilities and vulnerabilities, target analysis, battle damage assessment (BDA), and the current status and priority of assigned targets to assist in execution day changes. Principal staff sections; e.g., personnel, intelligence, logistics or communications provide tailored staff support to the TACC, including appropriate full-time representation as required.

This cross-functional representation within future plans, future ops, and current ops facilitates a fully integrated plan from conception to execution.

The TACC uses specialized information systems and equipment to display a common picture of the aviation situation received from tactical digital information links. Each Marine aviation function (antiair warfare, assault support, electronic warfare, air reconnaissance, offensive air support, and control of aircraft and missiles) has representatives in the TACC.

Direct Air Support Center

The DASC is established by the Marine air support squadron (MASS) and processes immediate requests for air support, coordinates aircraft employment with other supporting arms, manages terminal control assets such as forward air controller (airborne) (FAC[A]) and assault support coordinator (airborne) (ASC[A]) supporting ground forces, and will provide procedural control of assigned aircraft, unmanned aerial vehicles, and itinerant aircraft transiting through its assigned area. The DASC can employ a direct air support center (airborne) (DASC[A]) aboard a KC-130 that will provide extended line of sight communications with low flying aircraft.

The DASC will normally be collocated or electronically linked with the senior fire support coordination agency ashore. In a MEF operation where there are multiple maneuver elements (divisions) within the GCE, the DASC may be collocated with the MAGTF FFCC to centralize close air support and assault support management between the GCE maneuver elements in accordance with the MAGTF commander's intent. The DASC will usually deploy air support elements (ASE) to each major maneuver element FSCC to provide them the necessary links to the MACCS, enabling them to request and coordinate direct air support. Size and composition of the ASE will vary. It can be expanded or reduced as the situation requires (limited by the assets available). The DASC only has the capability to provide procedural control for aircraft operating in the MAGTF AO. In expeditionary operations, the DASC will normally land in the same scheduled or on-call wave as the senior FSCC phased ashore.

The DASC is normally the first major air control agency ashore in expeditionary operations. Air support personnel control aircraft en route to the forward air controllers serving with infantry units. DASC controllers also monitor and provide safety of flight information to assault support aircraft operating in its area. The DASC assists GCE units obtain additional air support—fixed-wing aircraft or helicopters—by processing immediate air support requests. Because of their proximity to the senior FSCC, DASC personnel help the wing commander maintain awareness of the ground combat situation.

TACPs provide coordination between GCE units and supporting aviation assets. TACPs exist at the infantry division, regiment, and battalion levels. Depending on the command level, a TACP contains a combination of air officers, forward air controllers, and enlisted radio operators. Air officers serve at the division, regiment, and battalion levels. These officers serve as special staff officers to their respective commanders. Additionally, they may serve within the FSCC to assist with planning and deconfliction functions related to air support for the assigned unit. Forward air controllers provide terminal control of close air support aircraft that are passed to them by the DASC. These officers also advise GCE commanders on aviation capabilities and limitations and prepare requests for air support.

Marine aviators and flight officers often serve as airborne extensions of the MACCS. The tactical air coordinator (airborne) (TAC[A]) serves as an extension of the DASC and coordinates aircraft en route to offensive air support missions. The TAC(A) receives aircraft handoffs from the DASC, briefs those aircrews, and then turns those missions over to ground or airborne forward air

controllers for terminal control. The ASC(A) also serves as an extension of the DASC and coordinates complex helicopter missions. The ASC(A) deconflicts transport packages, escort packages, and fire support efforts throughout the mission. Airborne strike coordination and reconnaissance is a means to efficiently focus aviation fires in the deep battlespace. This function is usually performed by multiseat F/A-18 aircrews. It allows real-time reconnaissance to locate the MAGTF commander's high-priority targets. Once located, the strike coordination and reconnaissance aircrews control attack aircraft in much the same manner as a TAC, cycling and deconflicting multiple strike packages as they ingress to the target area.

Several employment options are available for the DASC, including an airborne configuration in a C-130. MASS assets are tailored to provide support based on the mission. A MEF could require the task organization of the assets of more than one MASS. At the MEU(SOC) level, a MASS detachment may be task-organized as an ASE. The size and capability of the DASC depend on the number of TACPs that will be requesting air support and the number of aircraft executing air support missions. The DASC maintains communications connectivity with the other MACCS agencies, the FSCC, aircraft under its control, UAV squadron(s), and joint and other-Service air support organizations. The DASC also requires connectivity with forward-based air assets to request launches in support of ground forces.

Tactical Air Operations Center

The Marine air control squadron (MACS) provides equipment and personnel for tactical air operations center (TAOC) operation. The TAOC provides the ACE with the capability to detect and identify hostile aircraft and missiles; control the interception of hostile aircraft and missiles; and provide tactical routing to friendly aircraft. MACS personnel assigned to the TAOC use specialized information systems, sensors, and dedicated communications links to search the MAGTF airspace and coordinate air defense for vital areas. The TAOC controls friendly aircraft in the interception of hostile aircraft and assists missile units in locating and destroying hostile aircraft. Information gained through radar and tactical digital information links is transmitted to the TACC and updates the air picture for the wing commander. The TAOC also interfaces with the Air Force air operations center and control and reporting center to coordinate joint air defense efforts. The TAOC is movable but not mobile and is located in the rear of the AO. The TAOC is often located at a fixed-wing airfield. A MEF will normally deploy with one or two MACSs (task-organized) to operate and maintain the TAOC. Normally, a MEU(SOC) has no requirement for a TAOC, but an early warning/control capability may be task-organized as part of a special purpose MAGTF (SPMAGTF) if required.

Marine Air Traffic Control Detachments

Air traffic control detachments are components of the MACS. They are task-organized to provide terminal air traffic control for expeditionary airfields and other FOBs. The Marine air traffic control detachment provides airspace control, management, and surveillance for its designated sector or area. Services include radar approach/departure control, precision and instrument approaches, control tower, and tactical air navigation (TACAN). Detachment radar contributes to the overall air surveillance effort. The detachment can coordinate with Stinger teams that are defending airfields to help them detect hostile aircraft. The detachment serves as the MAGTF's liaison with national and international air traffic control agencies.

The MACS has four air traffic control detachments. All four would be required to support a MEF operation (four expeditionary airfields and up to four other facilities or sites could be established). Large radar systems, support equipment, and shelters are used to provide this MEF-level support. Deployment options include a mobile

team capability. The mobile team is task-organized to provide an initial, rapid-response capability for the establishment and control of tactical landing zones. A MEU(SOC) would normally deploy with a mobile team.

Low-Altitude Air Defense Battalion

The LAAD battalion establishes a COC from which the LAAD battalion commander exercises overall command and control of LAAD battalion operations. The battalion is comprised of two batteries with three platoons per battery and three sections per platoon. A section, the smallest employable LAAD element, has five Stinger teams that may be any combination of man-portable and high-mobility, multipurpose wheeled vehicle (HMMWV)-mounted Avenger teams. A MEF is normally supported by the entire battalion, while MEU(SOC) support is provided by a single section. LAAD units are routinely task-organized to support various contingencies. LAAD section leaders/platoon commanders/battery commanders position themselves where they can best provide command and control of their units and maintain connectivity with the MACCS and/or supported units. When operating in GS of the MAGTF, collocation with the TAOC is desirable to optimize integration of their teams into the overall MAGTF air defense effort and to gain access to the air defense picture. When operating in DS of the GCE, collocation with the DASC provides a means for LAAD commanders to receive current information and status from the GCE while also providing an alternate means to communicate with the MACCS. When information from other MACCS sensors is not available, each section can employ a lightweight, short-range organic radar to detect aircraft and cue Stinger teams.

Logistics

Combat Service Support Operations Center

The combat service support operations center (CSSOC) serves as the hub for future and current operations planning within the FSSG main. Each CSS functional area (supply, maintenance, transportation, engineering, health services, and services) provides representation to the CSSOC. Under the supervision of a G-3 watch officer, these personnel monitor current operations and maintain status displays of friendly and enemy situations. Additionally, CSSOC personnel handle requests from subordinate units and keep the MAGTF informed of the CSS situation. FSSG commanders may choose either a centralized or decentralized configuration for their CSSOCs. See MCWP 4-1 for more information.

Combat Service Support Detachments

Depending on the situation, the FSSG commander may establish detachments to provide DS or GS to the other MAGTF elements. Detachment commanders may establish small CSSOCs to coordinate support and monitor logistic communications nets. In this instance, the CSSOC would resemble a tactical echelon of the FSSG. Communications connectivity would be predominantly through single channel radio (SCR).

Movement Control Centers

Movement control centers support the deployment of the MEF from the home station, through intermediate bases, to the destination. The MARFOR commander establishes a headquarters movement control center, which provides connectivity to the US Transportation Command (USTRANSCOM) and keeps the MEF force movement control center apprised of strategic movement issues. The force movement control center controls and coordinates all movement support and conducts liaison with the Air Mobility Command, Military Sealift Command, and Military Traffic Management Command. The force movement control center supervises efforts of unit movement control centers of the division, wing, and FSSG. These latter units provide transportation and communications assets in support of deployment activities. Bases and air stations from which Marine units deploy establish base or station operations support

groups to coordinate their efforts with those of deploying units. These bases also provide their transportation and communications assets in support of deploying units. These units augment unit movement control centers to ensure that all personnel and materiel arrive at sea and aerial ports of embarkation. During employment, the function of movement control centers transitions to battlefield circulation and tactical movement control. The MAGTF G-3/S-3 establishes priorities for these functions.

Logistics Cells

The G-4/S-4 may establish logistics cells in both the main and rear echelons. In the main echelon, the CSS cell will monitor the logistics situation and keep the common operational picture current with respect to the logistic status of the unit. The CSS cell will interact with the current operations cell to ensure adequate CSS for the current operation and coordinate with the future operations cell to ensure the logistics supportability of future operations. The focus of the CSS cell in the rear echelon will be on coordinating logistics support for the unit from supporting CSS units. The rear cell will collect and analyze logistic data, provide projected CSS status information, and plan and control administrative movements.

Communications and Information Systems

The CIS officer (the G-6) exercises technical direction and overall control over the MAGTF communications networks and information systems from the MEF communications control center (MCCC). The G-6 also coordinates with the controlling authorities of external communications networks. The G-6 is assisted in these responsibilities by the communications battalion. Communications control is performed at all echelons of the MAGTF down to battalion level by the G-6 or the S-6 with the assistance of organic and supporting communications units or detachments.

Communications control consists of three primary functions: systems planning and engineering, systems control (SYSCON), and technical control (TECHCON). Systems planning and engineering tasks include determining the CIS requirements of the organization; designing the communications networks to support those requirements; and promulgating CIS plans, orders, and directives. SYSCON involves supervising, coordinating, and controlling the overall day-to-day operation of MAGTF communications networks, and TECHCON is the centralized technical supervision of the installation, operation, and maintenance of MAGTF communications networks.

Systems planning and engineering at any echelon involves the design of communications networks. These networks are designed and subsequently engineered to meet the operational requirements as determined by the CIS officer. Circuits are determined by G-6/S-6 systems planning and engineering personnel by type and number to meet the internal and external communications requirements of the command. The systems planning and engineering personnel normally perform their duties in a suitable facility as part of the G-6/S-6 staff in the main command post. The MAGTF G-6 as the senior CIS officer directs the overall systems planning and engineering effort. The communications battalion provides personnel to support systems planning and engineering. The G-6/S-6 at lower echelons, with assistance from the supporting communications unit/detachment, plans communications support in accordance with the overall MEF communications plan.

SYSCON consists of all activities needed to monitor CIS operations and resolve conflicts. Headed by the operations officer of the supporting communications unit, the SYSCON staff establishes the operational systems control center (OSCC) to maintain current information on the availability and operational readiness of CIS.

TECHCON is the centralized technical supervision of the installation, operation, and maintenance of the CIS of the MAGTF. The TECHCON operations staff supervises the installation, operation, and maintenance activities of the communications battalion companies and/or their detachments. The TECHCON operations staff is supported by and directs the activities of the TECHCON facility.

Marine Expeditionary Force Communications Control Center

To coordinate and direct communications control efforts, the G-6, with staff augmentation from the communications battalion, establishes the MCCC. The MCCC coordinates external communications control with the JTF or combatant commander J-6 through the joint communications control center as described in CJCS Manual 6231.07, *Joint Network Management and Control*. An MCCC may also be required to provide communications control support to the Marine component headquarters. Augmentation from other communications battalions would be required to support separate MEF and Marine component communications control centers. The MCCC is required because of the complexity of communications control responsibilities and functions.

Operational Systems Control Center

The systems control staff supervises the OSCC activities. The OSCC directs the day-to-day operation of the communications networks, compiles statistics and reports for use in long-range planning, and serves as the focal point for coordination of user requirements and allocation of CIS resources. The communications battalion provides the operational systems control staff and mans the OSCC. In a similar fashion, the supporting communications unit at each MSC provides the operational systems control support for its command. At lower echelons, operational systems control functions are generally performed by organic communications unit personnel without establishing an OSCC.

Technical Control Facility

The TECHCON facility provides centralized technical supervision of the installation, operation, and maintenance of selected circuits, terminal equipment, and dedicated services. The TECHCON facility provides the means to conduct technical supervision of circuits and coordinate with other facilities for circuit troubleshooting and restoration. The size and scope of this facility are driven by the number of units being supported and types of services provided. Personnel assigned to the TECHCON facility must have the technical expertise and experience to resolve complex communications problems.

Amphibious Command and Control Facilities

When the MAGTF is embarked aboard amphibious shipping, the MAGTF commander serves concurrently as the CLF. While embarked, the MAGTF commander and his staff direct the actions of the MAGTF from command and control facilities aboard the amphibious ships. MAGTF command and control may remain afloat throughout the expeditionary operation. Shipboard command and control facilities also support the commander, amphibious task force (CATF), who normally is located with his staff aboard the flagship.

Landing Force Operations Center

The LFOC is the shipboard space allocated to CLF and the LF staff to plan and execute LF operations. The LFOC is normally located on the ATF flagship. The LFOC staff are the same personnel who man the MAGTF COC when, and if, it is phased ashore. The functions of the LFOC mirror those of the COC. This center controls and monitors LF activities until CLF establishes command ashore.

Supporting Arms Coordination Center

The supporting arms coordination center (SACC) exercises overall coordination of supporting fires within the amphibious operating area. This center, located aboard the amphibious flagship, consists of a supporting arms coordinator and naval gunfire, air support, and target information sections. ATF operations, intelligence and communications, and LF fire support personnel perform the functions of the SACC. These functions are similar to those performed by the FFCC and FSCC that may be subsequently established ashore. A LF liaison is established in the SACC if the responsibility for coordination of supporting arms is passed ashore.

This center provides the commanders of the ATF and the LF with information concerning the requirements and developments that affect coordination of fire delivery by naval gunfire units, support aircraft, and artillery units. Fire support requests received from the ATF or LF are coordinated from this center to ensure that all fires are integrated to achieve the maximum effect against targets. Current fire support information is continually updated and displayed while direction for the execution of restrictive fire plans and instructions concerning troop safety are promulgated. Surface fire support plans are prepared and their execution is supervised by the SACC staff. This center also coordinates air support operations with appropriate ATF and LF air control agencies. Records of targets in the objective area are maintained and appropriate fire support activities are monitored when responsibility for the coordination of fires is passed ashore to CLF.

Navy Tactical Air Control Center

The Navy TACC is organized and located in the ATF flagship. It provides the means to direct and coordinate all tactical air operations in an objective area, including antiair warfare, until this responsibility is transferred to Marine air control agencies ashore. The Navy TACC consists of a tactical air controller; an air support controller; an antiair warfare coordinator; and appropriate operations, intelligence, and communications personnel and equipment. These personnel and their equipment are provided by the flagship, ATF staff, and a designated tactical air control squadron.

Helicopter Direction Center

The helicopter direction center (HDC) is organized aboard the flagship of the helicopter transport group to provide the means to direct and control helicopters during the ship-to-shore movement. It consists of a helicopter director, who is responsible to the tactical air commander for direction of all helicopters and supporting aircraft; a helicopter direction net officer; a helicopter air controller; and other appropriate air operations and communications personnel and equipment. These personnel and their equipment are normally provided by the flagship on which the HDC is established.

To effect the direction and control of helicopter movement in an objective area, the HDC must operate under the overall direction of the Navy TACC for coordination of air operations with other agencies and under the OPCON of the helicopter transport group commander. This center advises the Navy TACC on all matters pertaining to the movement of helicopters that require coordination with supporting arms. It provides information as directed by the Navy TACC and the helicopter transport group commander and maintains status of availability and location of assigned helicopters. The HDC also receives requests for helicopter support, designates units to provide the helicopters for specific missions, and directs their employment. This center further controls the movement of helicopters, both transport and escort, from wave rendezvous to the initial point and from takeoff at the landing zone to the breakup point. The HDC also controls movement of helicopters between platforms and assists the DASC in controlling helicopters between ship and shore after the control of helicopters has been passed ashore.

Tactical-Logistical Group

Tactical-logistical groups (TACLOGs) are temporary agencies that are organized as required by the LF to assist the naval control organization in the ship-to-shore movement of troops, equipment, and supplies. They are normally established aboard control ships at each echelon of the MAGTF, along with the naval control agency that is exercising control over the ship-to-shore movement of that echelon during a surface landing. They are also established aboard each helicopter transport carrier during vertical assaults. A TACLOG consists of operations, CSS, embarkation, and communications personnel provided by the parent ground combat organization.

The TACLOG assists the corresponding naval control agency in handling LF requirements during the ship-to-shore movement. It is task-organized to advise the naval control agency as to the location of units, equipment, and supplies and to monitor their regulated movement ashore. The TACLOG maintains a detailed record of the status of unloading and landing, provides information to appropriate commanders concerning the progress of the ship-to-shore movement, and responds to routine requests received from units by coordinating with the naval control agency. It further advises the naval control agency when the tactical situation ashore dictates an adjustment to the prescribed landing sequence.

ATF Intelligence Center

The ATF intelligence center (ATFIC) is the principal intelligence command and control and operational node for both the ATF and the LF. The ATFIC is normally located on the AF flagship. It enables the integration of naval, and possibly other component, intelligence-related command and control and operations resources and capabilities in a mutually supporting manner. In this way, available intelligence resources are used most effectively in support of ATF, LF, higher and other force's intelligence requirements.